

POLITICAL STABILITY AND FOREIGN AID ON ECONOMIC GROWTH WITH REFERENCE TO OVERLAPPING GENERATIONS MODEL: AN ANALYSIS

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***Abstract:** In a developing economy, the impact of foreign aid could have different implications depending on the political stability of the country. Viewed through an Overlapping Generations Model of two periods, we observe the effects of a one-time foreign aid on economic growth of the country. It is seen that political stability plays a major role in the future growth. A politically stable country has the incentive to invest the aid received into enhancing future production. However, a politically unstable country would find it more opportune to spend the aid on current consumption and thereby reducing potential future growth.*

Introduction

We are all familiar with the macroeconomic challenges that are faced by the developing world. Most of the ideas and model built in Economics are focused primarily on the experiences and data from the OECD countries. The reality on the ground for the developing countries can be quite different and therefore needs further scrutiny and investigation.

One of the most ubiquitous aspects of the modern world of macroeconomic activity is the existence of foreign aid. This is primarily an attempt by the developed world to help in development in the developing world by providing various kind of assistance. The goal of the aid is to generate economic growth which would allow the developing countries to reduce poverty and create wealth.

As a general idea this could be a good thing. Historically, since the beginning of the Industrial Revolution the political relationships between the European and North American countries and the rest of the world had not been a smooth sailing. During the preceding Mercantile period, the European maritime powers such as the English, Dutch, French, Spanish, and the Portuguese had spent much treasure and lives conquering the New World. The Industrial Age saw the Europeans consolidate and expand their colonial holdings into the Old World.

The Nineteenth Century had been one of European colonial domination of the rest of the world. Having fought each other over India and non-Ottoman Asia, the Europeans were saw Africa as an ultimate prize. Having been impeded on expansion in South America by the United States following the demise of the Spanish control there, the European states gleefully carved up Africa amongst themselves. Such was the appetite for Africa that deep in to the Twentieth Century, Mussolini attempted to invade Ethiopia in the 1930s as a way of “keeping up with the Joneses”- in this case other European nations.

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Following the two World Wars, the colonized countries gradually became independent. However they were industrially backward and primarily agrarian. The international community felt that it was imperative that the developed world, having controlled the developing for so long, has a degree of responsibility in bringing these countries towards development.

As a result, since the 1960s, we have countries such as the UK and Japan who devote some part of their GDP in overseas aid and development with the EU seeing it fit to follow suit. International aid has become a major part of international relations and a way of developing goodwill among nations as well as economic growth.

But how effective is international aid in generating economic growth?

Literature Review:

Easterly (1999) suggests that international aid agencies tend to use the Harrod-Domer model to estimate the investment requirement for a target growth. Then they calculate a “Financing Gap” between the required investment and existing available capital. The “Financing Gap” is covered with aid requisite aid. “The Financing Gap Model has two simple predictions: (1) aid will go into investment one for one, and (2) there will be a fixed linear relationship between growth and investment in the short run. The data soundly reject these two predictions of the Financing Gap model.”

Comparing countries with differing political systems one finds differing results depending on the stability of the political system. (Islam, 2003) “On average aid is found to have a negative significant impact on growth in developing countries, although the effect seems to be quite fragile and varies substantially across regime type. In tin-pot countries aid has very little impact on growth and the returns to aid as aid/GDP increases appear to be constant. But in totalitarian countries aid has a robust positive significant influence on growth, with a tendency for diminishing returns for an aid/GDP ratio in excess of 21.5%.”

A fundamental problem with aid agencies is their approach. They are seeking total transformation of economically backwards societies when they should be trying to help selected groups (Easterly, 2003). The way these agencies try to function is also problematic. “...aid agencies face poor incentives to deliver results and underinvest in enforcing aid conditions and performing scientific evaluations.”

In fact it has been seen from evidence that aid often results in consumption and fails to become transformed into investment. Aid from Middle Eastern OPEC countries to poorer Muslim nations have been a case in point. “Aid has no measurable impact on prices or economic growth, though it does affect most components of the national income accounts. We find that much aid is consumed, primarily in the form of imported non-capital goods.” (Werker et al, 2009)

Objectives:

General Objective:

To create a model in order to study the impact of foreign aid in a simple agrarian (non-industrial) economy.

Specific Objective:

1. To determine if political stability (or lack thereof) has any impact on economic growth.
2. To determine if international aid has any impact on economic growth

Limitation

This paper is only a small exercise in modeling and has no empirical evidence such as real life data to support its findings. Further empirical investigations may shade lights on the validity of the model. Needless to assert that the model itself is also very simplified and therefore not to be taken as any kind of insight into the real-life world of economic growth in the developing world. All it does is shed some light on differential approach to international aid.

Methodology

This is a construction of a model for explaining the impact of foreign aid in economic growth of an agrarian economy. We have explored a theoretical framework within which we can create an explanation for this purpose. Since the premise and the methods used are purely theoretical, there has been no need for data or empirical usage for this model. Given that we want to measure the effect of a onetime aid package, we cannot limit our study to a singular period. Hence we choose the Overlapping Generations Model to do the study.

Model Development:

First we look at an agrarian economy production in two periods. The first period is when the population works and second period is when the population retires. We look at household behaviors and constraints as well as the GDP. We created an endogenous variable indicating political stability that allows households to forego current consumption in favor of future consumption.

Secondly, we add foreign aid to the mix. There is another endogenous variable that indicates how much aid is spent in consumption in the first period and how much is left for investment in second period. Then we looked at the production function in the two periods. A low value of the endogenous variables mentioned above would be indicative of political stability and economic growth. Conversely, a high value would indicate instability and preference for consumption in the first period and therefore less investment and growth in the second period.

The theoretical framework limits the role of consumption as an alternative to investment. Our take is that given we are looking at a rudimentary level of industrialization and primarily agrarian economy, this assumption is justified. Given that consumption is seen to be augmented by foreign aid, our model looks at the effect of foreign aid within the present constraints of the economy and not just an exogenous factor.

It could be argued that political stability is “priced in” to the consumption decisions of the population. However, we feel that we are on strong theoretical grounds to suggest that politically unstable nations would show greater preference for consumption at the present rather than consumption in the future. We have tried to represent that particular notion in the model.

Model

For our choice of a model we are electing to adopt an Overlapping Generations model with two periods. The intent is to look at impact of a one-time international aid (concessional) in one period and the residual impact of it in both periods.

Assumptions of the model:

- We are looking at an agrarian economy with little or no government purchases.
- Households exist for 2 periods. In period 1 they work and in period 2 they are retired.
- There are no taxes [possibly due to weak collection structure, *a la* Greece].
- No social security, no rates of interest, and no financial institutions.
- Production takes place in both periods. So the production function is linear, suggesting perfect substitutability between labor and capital.
- There is no depreciation of capital
- Firms seek to maximize profits and are price takers
- Foreign aid is delivered once during the first period and is concessional in nature.

Production Behavior:

Production Function is:

$$Y_t = AF(L_t, K_t); t=1, 2$$

F is linear, since there has to be perfect substitutability between L and K. This is due to the fact that the household works in period t and therefore production uses both L and K. However since household does not work in period t+1, production is entirely based on capital and capital growth.

We note that Y_t and Y_{t+1} could have the following relationships:

$$Y_t = Y_{t+1}$$

Which would indicate that there has been no economic growth. Or

$Y_t < Y_{t+1}$ indicating that economic growth has taken place.

Household Behavior Without Aid:

Household Consumption in period $t+1$:

$$C_{t+1} = (Y_t - C_t) + Y_{t+1}; t = 1, 2$$

We use the above as a constraint:

Utility function for households:

$$U(C_{t+1}, C_t) = \delta v(C_t) + v(C_{t+1})$$

δ is the rate of time preference.

$\delta > 1$ implies that consumption in period t is more valuable than consumption in period $t+1$.

Rate of time preference of Consumption

The significance of δ is due to the fact that we are using δ as a proxy for political stability. If there are uncertainty regarding the future, which is a high indicator of lack of political stability, this would mean that households would prefer to consume more at period t rather than period $t+1$.

The household would seek to maximize their utility which can be seen by the following constraint optimization function:

$$\text{Max } U(C_{t+1}, C_t) = \delta v(C_t) + v(C_{t+1})$$

$$\text{S.t. } C_{t+1} = (Y_t - C_t) + Y_{t+1}; t = 1, 2$$

Consumption, Saving, and Investment:

$$\text{Saving at time } t = S_t = (Y_t - C_t)$$

Given that households only work in period t , there must be saving in order to add to capital stock for production in period $t+1$.

Investment in period $t+1$ would be equivalent to savings in period t (we are assuming that whatever is saved is invested)

Investment at time t :

$$I_t = K_{t+1} - K_t = S_t = (Y_t - C_t)$$

This assumes that there is no capital depreciation.

Capital stock in period $t+1$ would be:

$$K_{t+1} = K_t + (Y_t - C_t)$$

Adding Foreign Aid:

Now, let ϕ denote foreign aid in Period t as a one-time deal. This of course raises the question of how shall this one time aid be spent. We can see the following three scenarios:

Case 1: Foreign aid is used up as consumption in period t .

Case 2: Foreign aid is used to add to the capital stock in period $t+1$.

Case 3: Foreign aid is partially used for consumption in period t and partially used to boost investment for period $t+1$.

Therefore we can divide the proportions of foreign aid that would be used in both periods:

Foreign aid used in period t : $\rho \phi$

Foreign aid used in period $t+1$: $(1-\rho) \phi$; $0 < \rho < 1$

Household constraint in the presence of foreign aid will be:

$$C_{t+1} = (Y_t - C_t) + Y_{t+1} + (1 - \rho) \phi; t = 1, 2$$

Restating the model with foreign aid :

$$\text{Max } U(C_{t+1}, C_t) = \delta v(C_t) + v(C_{t+1})$$

$$\text{s.t. } C_{t+1} = (Y_t - C_t) + Y_{t+1} + (1 - \rho) \phi; t = 1, 2$$

Consumption, Saving, and Investment:

$$\text{Saving at time } t = S_t = (Y_t - C_t) + (1 - \rho) \phi$$

Investment at time t :

$$I_t = K_{t+1} - K_t = S_t = (Y_t - C_t) + (1 - \rho) \phi$$

Capital stock in period $t+1$ would be:

$$K_{t+1} = K_t + (Y_t - C_t) + (1 - \rho) \phi$$

Clearly, foreign aid improves the maximum utility of a representative household, for it loosens the constraint.

However, how much of the foreign aid is used for consumption and how much it is used for investment is the crux of the matter when it comes to economic growth.

Growth requires: $Y_{t+1} > Y_t$.

A boost in Y_{t+1} requires a boost in investment in period t .

We are therefore compelled to ask the question:

What should happen to compel a country such that foreign aid contributes strongly towards Y_{t+1} ?

Proportion of Aid and growth:

Given that the greater the value of ρ the greater the usage of aid in consumption of Period t and less the saving of it to carry over to the period $t+1$.

This indicates that a smaller value of ρ would indicate greater economic growth.

Political Stability: An Intertemporal Analysis

The consumption function of a representative household is given by:

$$U(C_{t+1}, C_t) = \delta v(C_{t+1}) + v(C_t)$$

A lower δ , can increase the importance of consumption in period $t+1$ and encourage saving and investment to finance it.

δ is smaller in a country with political stability compared to a country without it (a lack of political stability encourages people to consume now rather than later).

Thus political stability positively contributes to the effect of foreign aid on investment and the subsequent economic growth.

Significant Parameters of the Model:

Therefore we state that the two endogenous parameters of the model, ρ and δ would give us what we seek in terms of the objectives of our study:

The value of ρ would tell us how much foreign aid is going towards consumption in the first period (i.e. $\rho \cdot \phi$), so the remainder (i.e. $(1 - \rho)\phi$) will be included in investment in period $t+1$ and therefore contributing towards economic growth. The greater the value of ρ the less is added to the capital stock for period $t+1$.

The value of δ would tell us how much consumption is preferred in period 1. The higher the value of δ ($\delta > 1$), the greater the preference. This indicates a lack of political stability leading less saving and less investment in period 2, leading to little or zero economic growth.

Conclusions:

As we see that the model tells us that international aid is not necessarily a cure-all for economic growth and development. Political stability is a major factor in determining whether a country will experience economic growth or not. In absence of such stability it is likely that economies may experience zero or (given a high enough value of δ) negative growth.

Similarly, foreign aid can only contribute to economic growth if it can be used to augment investment. As we have seen, if foreign aid is used up in consumption in the first period, then it does not matter how much the aid is, it will have no contribution to economic growth.

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